

REMARKS

In response to the Examiner's rejection of Claims 10-13 under 35 USC 112, first paragraph, these claims have been canceled. Newly presented Claims 18-23 contain "closed" language and are being presented to further distinguish the claimed invention over the cited prior art.

Claims 3-5 and 15 have been rejected under 35 USC 102(e) as being clearly anticipated by Shibayama et al '690. Claims 1, 2, 6, 8, 9, 14, 16 and 17 have been rejected under 35 USC 103(a) as being unpatentable over Shibayama et al '690 or Shibayama et al '788 combined with Doner et al or Tanaka et al. Applicants respectfully traverse these grounds of rejection and urge reconsideration in light of the following comments.

At the outset, Applicants wish to point out that Claims 4 and 5 are dependent on Claim 1 and not Claim 3. Since Claim 1 has been rejected under 35 USC 103(a), Claims 4 and 5 should not be rejected under 35 USC 102.

As discussed previously, the instant invention is directed to a grease composition used in the lubrication of bearings contained in spindle motors employed in peripheral information devices such as hard disk drives, floppy disk drive memories, compact disk drives and magneto-optical disk drive systems, which are found in computer systems and video tape recorders.

The instant invention is based on the discovery that when a lubricating grease composition contains the claimed carbonate compound as a base oil, a lithium soap as a thickener and the claimed organomolybdenum compound(s), the grease composition has unexpectedly superior properties in overcoming the problems of generating gaseous oil or fine particles scattering from the inside of the bearing which is contained in a peripheral information device, thereby avoiding the contamination and malfunction thereof.

In the present invention, the carbonate compound has branched alkyl groups provided therein distributed

concentrically in the range of from 13-15 carbon atoms in order to give the carbonate composition improved evaporation and frictional torque characteristics. Additionally, in peripheral information device lubricating compositions, it is known that bearing greases should not be added with any additives, if possible, or if an additive is present, it should be there in as small an amount as possible so as to stabilize the properties of the bearings over a long period of time. Newly presented Claims 18-23 reflect this aspect of the present invention. Once again Applicants wish to iterate that in the field of information devices, minute amounts of impurities or outgases can cause severe problems so that the common knowledge in the art with respect to the use of additives in lubricating compositions in general does not apply to the field of the present invention. As such, it is respectfully submitted that the presently claimed invention is clearly patentably distinguishable over the prior art cited by the Examiner.

Since Shibayama et al '788 issued from a divisional application of Shibayama et al '690, these references contain the same disclosure. The Shibayama et al references disclose a lubricating grease composition for ball bearings comprising a base oil and a thickening agent, wherein the base oil comprises a carbonate ester having unsaturated or saturated, linear or branched alkyl group residues having from 6-30 carbon atoms as shown in Column 1, lines 36-45. Examples 1, 3 and 4 in Column 3 of this reference discloses a carbonate ester containing saturated linear alkyl groups. In contrast thereto, Claim 3 of the present invention requires that the carbonate compound have branched alkyl groups of a specified configuration. As such, Examples 1, 3 and 4 clearly do not anticipate the subject matter of Claim 3.

As shown in the Declaration Under 37 CFR 1.132 and the Examples and Comparative Examples contained in the present specification, it is critical in the claimed invention that the carbonate hydrocarbon residues are a branched alkyl group

having from 13-15 carbon atoms. Nothing in the Shibayama et al reference suggests that any criticality would be attached to this requirement. Moreover, these references have no disclosure regarding the claimed organomolybdenum compounds. As such, it is respectfully submitted that the presently claimed invention clearly is patentably distinguishable over these references.

The Doner et al reference discloses pre-blended combinations in reaction products of at least one metallic dithiocarbamate and at least one metallic dithiophosphate which are used as lubricants in mechanical systems under heavy loads and in engines. There is no suggestion in these references that anything advantageous would be obtained by combining the lubricants disclosed there for mechanical systems under heavy loads and engines with the lubricants of the Shibayama et al references which are used to lubricate ball bearings used in spindle motors for hard disks of computers and recording devices. As the Examiner is well aware, there must be some suggestion or teaching to combine references, especially when the references are directed to non-analogous fields. Applicants respectfully submit that only hindsight, provided by the present disclosure, is providing the motivation to combine the Doner et al reference with the Shibayama et al references. As such, Applicants respectfully submit that the presently claimed invention clearly is distinguishable thereover.

The Tanaka et al reference discloses a lubricating composition which is used in a grease for universal joints, including constant velocity joints, for automobiles, constant velocity gears and transmission gears. Like the previously discussed Doner et al reference, there is no suggestion in this reference which would motivate one of ordinary skill in the art to combine the lubricating composition disclosed there with the lubricating grease compositions of Shibayama et al given the different utilities to which these references are directed. As such, Applicants respectfully submit that the

presently claimed invention is clearly patentably distinguishable over Tanaka et al in combination with the Shibayama et al references.

Even though the Examiner has not made a showing of prima facie obviousness under 35 USC 103, it is respectfully submitted that given the objective evidence of record in the present application regarding the unexpected superior properties of the presently claimed invention in its intended utility, even if a proper showing of prima facie obviousness under 35 USC 103 was made, the patentability of the presently claimed invention thereover has been established. Moreover, newly presented Claims 18-23 expressly exclude critical components contained in the prior art. As such, these claims are even further distinguished over the prior art cited by the Examiner.

The Examiner is respectfully requested to reconsider the present application and to pass it to issue.

Respectfully submitted,


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